CLAIMS

WHAT IS CLAIMED IS:

1. A method for repairing defects in a normally white liquid crystal display, the method comprising:

applying power to the liquid crystal display;

backlighting the liquid crystal display while power is applied;

locating a defective pixel in the liquid crystal display while power is applied;

focusing a laser on a portion of a color filter corresponding to the defective pixel; and

at least partially ablating the portion of the color filter corresponding to the defective pixel using the laser.

2. The method of claim 1, wherein the step of locating further comprises locating electrically open pixels while applying power to the normally white liquid crystal display.

3. The method of claim 2, wherein the locating step comprises using a color vision system to locate the defective pixel.

4. The method of claim 1, wherein the step of ablating comprises using a controller to control the laser to ablate the portion of the color filter.

5. The method of claim 1, wherein the step of focusing further comprises focusing a laser having a wavelength in the visible range.

6. The method of claim 1, wherein the step of ablating further comprises darkening the portion of the color filter corresponding to the defective pixel.

7. The method of claim 1, wherein the steps of locating, focusing and ablating are repeated for a plurality of defects on the liquid crystal display.

8. An apparatus for repairing defects in a normally white liquid crystal display (LCD), the apparatus comprising:

a backlight adapted to illuminate the LCD;

a power source adapted to provide power to the LCD such that non-defective pixels will block transmission of light through the LCD;

a vision system adapted to locate defective pixels while power is applied to the LCD;

a laser providing a laser light output;

a motion control system coupled to the laser and adapted to control motion of the laser; and

a controller adapted to control the laser to ablate a portion of the color filter corresponding to a location of each defective pixel.

9. The apparatus of claim 8, wherein the laser has a wavelength in the visible range.

10. The apparatus of claim 8, wherein the vision system includes a camera equipped with automatic focus and automatic zoom that scans the LCD.

11. The apparatus of claim 8, wherein the laser includes a mask to block laser light from ablating portions of the color filter associated with non-defective pixels.

12. An apparatus for repairing defects in a normally white liquid crystal display (LCD), the apparatus comprising:

pixel defect location means for identifying a location of a defective pixel; and

ablation means for ablating a portion of a color filter corresponding to the location of the defective pixel.